Serial No.: 10/619,672

## REMARKS

Claims 1-8 are pending in the application. Claims 1 and 3 have been amended herein. Favorable reconsideration of the application, as amended, is respectfully requested.

Applicants have amended the title so as to be clearly indicative of the invention to which the claims are directed.

Claim 3, originally misnumbered as first claim 5, has been amended to provide proper claim numbering.

### *I. ALLOWABLE SUBJECT MATTER*

Applicants acknowledge with appreciation the indicated allowability of claims 4 and 5. These claims will be in condition for allowance upon being amended to independent form.

### *II. REJECTION OF CLAIMS 1-2 UNDER 35 USC §103(a)*

Claims 1-2 stand rejected under 35 USC §103(a) based on *applicants' admitted prior art (AAPA)* in view of *Muschallik*. Applicants respectfully request withdrawal of the rejection for at least the following reasons.

Applicants have amended claim 1 to emphasize the feature that the non-alignable low pass filter *is disposed between the tuner input and the frequency changer*. There are several advantages associated with the present invention as recited in amended claim 1. In particular, the non-alignable low pass filter does not require alignment during or following manufacture. The use of the low pass filter between the tuner input and the frequency changer and with the turnover frequency controlled as defined in claim 1 allows the tuner to achieve an acceptable performance, particularly with regard to image rejection, to allow digital terrestrial broadcast signal to be received without requiring any alignment during or after manufacture. The prior art referred to by the Examiner does not have such features of the invention mentioned above and does

not achieve the advantages achieved by the present invention. Accordingly, applicants respectfully submit that the invention recited in amended claim 1 is clearly patentable with respect to this prior art.

Specifically, the Examiner has rejected claim 1 as being obvious based on the combination of *AAPA* described on the first page of the specification and *Muschallik*. In paragraph 6 of the Office Action, the Examiner suggests that *AAPA* discloses the use of an image reject mixer. However, applicants respectfully submit that this is not the case. There is no reference whatever in *AAPA* to the use of an image reject mixer. There is a reference to filtering for attenuating the image frequency *but* this is an entirely different feature and is concerned with the frequency-dependent filtering ahead of the frequency changer and *not* with the frequency changer itself.

Further down paragraph 6 of the Office Action, the Examiner attempts to associate various features of claim 1 with features disclosed in *Muschallik*. In particular, the Examiner identifies the "non-alignable low pass filter" with the filters 22 and 23 shown in Figure 1 of *Muschallik*. The Examiner suggests that the filters 22 and 23 in *Muschallik* have a turnover frequency which tracks the frequency of the local oscillator so that the turnover frequency is greater than the frequency of the selected channel and less than the sum of the frequency of the selected channel and twice the output intermediate frequency. This is simply not the case, however, and is entirely contrary to the disclosure and teaching of *Muschallik*.

In *Muschallik*, the filters 22 and 23 are disposed downstream of the mixers 11 and 12 of the frequency changer. These filters are therefore operating at the intermediate frequency. Claim 1 has been amended to clarify that the non-alignable low pass filter is *disposed between the tuner input and the frequency changer* so that this filter operates at radio frequency before conversion to the output intermediate frequency. The location of the low pass filter of claim 1 is therefore quite different from that disclosed in *Muschallik*.

There is absolutely no disclosure or suggestion that the filters 22 and 23 in *Muschallik* should track the frequency of the local oscillator. In fact, because of the nature of the filters 22 and 23 and the function which they perform, these filters do not and cannot track the frequency of the local oscillator. *Muschallik* does disclose that the turnover frequencies of these filters may be controlled in order to select the intermediate frequency bandwidth downstream of the frequency changer. However, the turnover frequencies are controlled in accordance with the type of frequency conversion being performed and with the bandwidth of the received channel. This has nothing whatever to do with the frequency of the local oscillator.

The examiner suggests that *Muschallik* discloses non-alignable low pass filters. However, this would seem to be illogical in that, as stated by the examiner, *Muschallik* is entirely silent on the issue of alignability. It cannot therefore be said that *Muschallik* discloses that such filters should be non-alignable.

*Muschallik* therefore fails to disclose the essential features defined in the amended claim 1 of the present application that *the low pass filter is non-alignable, that the low pass filter is disposed between the tuner input and the frequency changer, and that the low pass filter has a turnover frequency which is arranged to track the frequency of the local oscillator so that the turnover frequency of the low pass filter is greater than the frequency of the selected channel and less than the sum of the frequency of the selected channel and twice the output intermediate frequency.* The combination of *Muschallik* and *AAPA* cited by the examiner cannot therefore make claim 1 obvious.

Claim 2 depends from claim 1 and can be distinguished for at least the same reasons.

For at least the above reasons, applicants respectfully request withdrawal of the rejection of claims 1-2.

### *III. REJECTIONS OF CLAIMS 3 and 6-8 UNDER 35 USC §103(a)*

Claim 3 stands rejected under 35 USC §103(a) based on *AAPA* in view of *Muschallik*, and further in view of *Katsuyama*. Claims 6-8 stand rejected under 35 USC §103(a) based on *AAPA* in view of *Muschallik*, and further in view of *Hayashi*. Applicants respectfully request withdrawal of each of these rejections for at least the following reasons.

Claims 3 and 6-8 each depend from claim 1, either directly or indirectly. As a result, claims 3 and 6-8 patentably distinguish over *AAPA* and *Muschallik* for at least the same reasons discussed above.

Neither *Katsuyama* nor *Hayashi* make up for the above-discussed deficiencies in *AAPA* and *Muschallik*. As a result, applicants also respectfully request the withdrawal of the rejections of claims 3 and 6-8.

### *IV. CONCLUSION*

Accordingly, all claims 1-8 are believed to be allowable and the application is believed to be in condition for allowance. A prompt action to such end is earnestly solicited.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Serial No.: 10/619,672

Should a petition for an extension of time be necessary for the timely reply to the outstanding Office Action (or if such a petition has been made and an additional extension is necessary), petition is hereby made and the Commissioner is authorized to charge any fees (including additional claim fees) to Deposit Account No. 18-0988.

Respectfully submitted,

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